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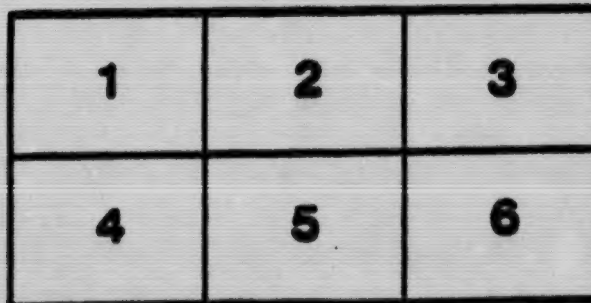
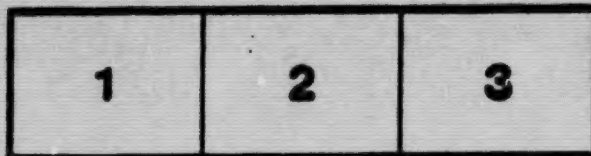
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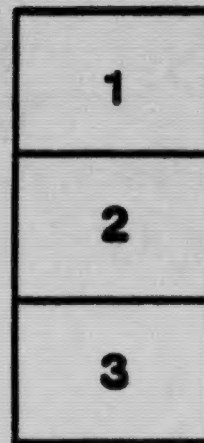
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1922/1925

2/ Geological Survey of Newfoundland

3/ REPORT

UPON

**The Mineral Resources of
the Island**

By
JAMES P. HOWLEY, F.G.S.
for the Year 1903.

ST. JOHN'S, N.F.
Robinson & Company, Limited, Press
1917.

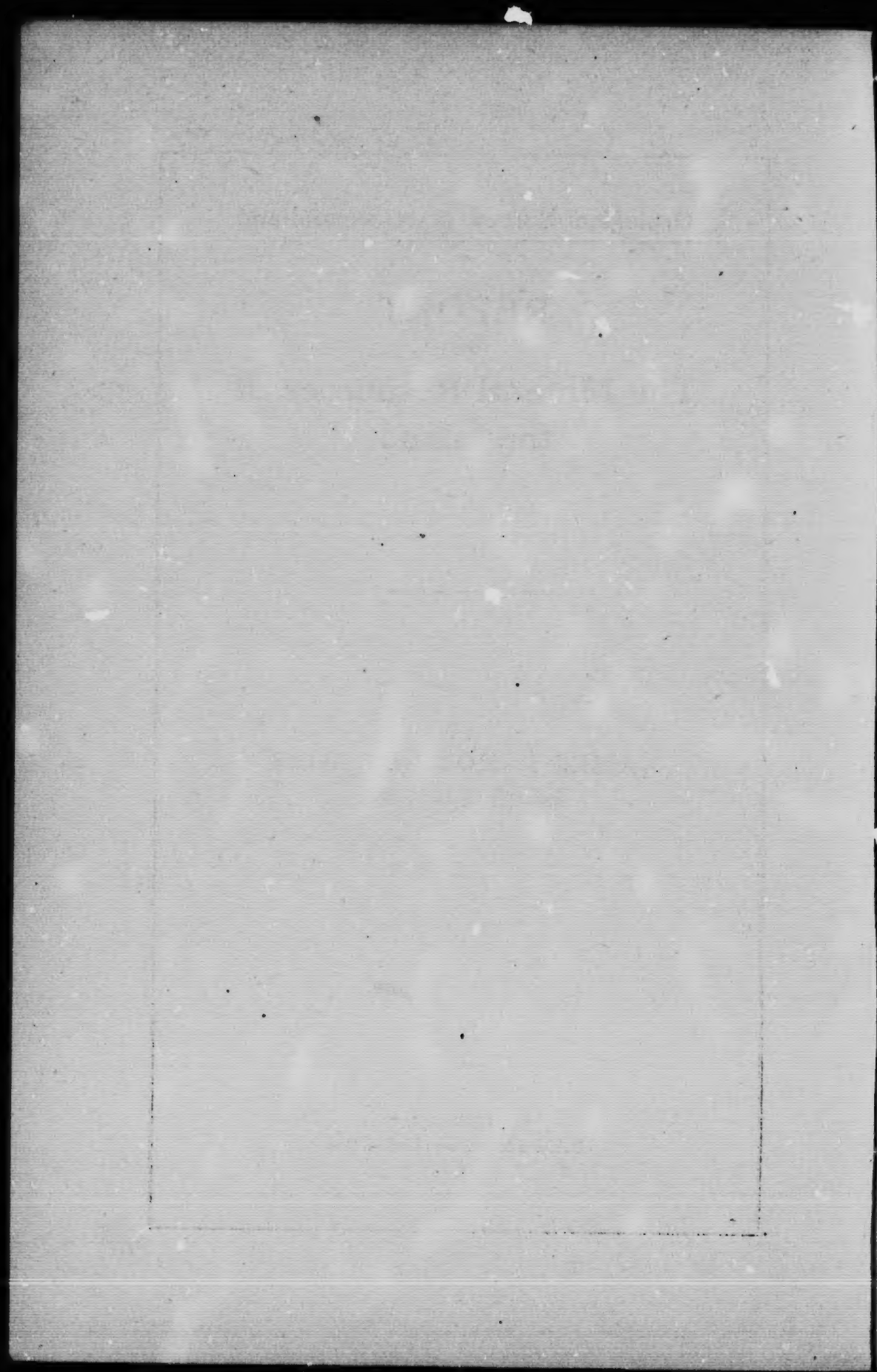
R. J. Howley

Geological Survey of Newfoundland

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**Report on the Mineral Statistics of Newfoundland for the
Calendar Year 1903.**

St. John's, Nfld.,
February 27th, 1904.

THE HON. ELI DAWE,

Minister of Agriculture and Mines.

SIR,—Considerable delay has been experienced in getting together the necessary information upon which to formulate a report on the mineral industry for the past year. The usual blank forms sent out early in December to the various mine managers and others engaged in this occupation were not all returned till quite recently and then only after frequent personal application in many instances. This reluctance to furnish particulars is quite at variance with the action of those in other countries engaged in similar pursuits, all of whom recognize the value of such statistics, and look upon their publication as a good advertisement.

Applications for copies of these reports both from home and abroad are constantly being received, and great numbers of them have been sent to Canada, the United States, Great Britain and other European Countries as well as to South Africa, the Australian Commonwealth and elsewhere during the last few years. The demand is constantly on the increase and it is a satisfaction to know that authentic information of this kind as to the Colony's mineral wealth is appreciated.

There can be little doubt that its dissemination abroad is creating a more lively interest in the country and its rich mineral resources than was heretofore evinced, as witnessed by the constantly increasing numbers of capitalists and others interested in mining, who visit the country each succeeding year.

Notwithstanding the great falling off in the shipments of iron ore from Bell Island in 1902 the increase in other directions will bring the total output well up to the average of other years. It is a noticeable feature of this branch of the country's industrial pursuits that as one mineral product begins to fail others come to

the front to supply the deficiency. Thus during the past year the value of both copper and iron pyrites shows a considerable increase, while the output of barite and slate is much beyond that of the preceding year also. Other less important substances such as granite, limestone, etc., were in excess. Taking it as a whole, the industry indicates a substantial growth from year to year.

The total value of the raw mineral substances used in the country, or exported therefrom, during the year 1903, amounted to \$1,269,805.00 as against \$1,217,686.00 in 1902, or an increase of \$52,119.00. Had the iron output reached anywhere near that of 1901 or 1902 the total result would have far eclipsed that of any previous year in the history of the country.

The depression in the iron markets last year, a natural sequel to the inflation which preceded it, was, no doubt, the chief cause of the shortage, but what affected it most was the unsettled condition of the Dominion Iron and Steel Co.'s affairs. This Company was faced with financial and other difficulties which compelled them to curtail their business. Their output fell short by 59,885 tons. The Nova Scotia Steel Co. also fell off by 80,041 tons, making a total shortage for the year of 133,072 tons representing the same number of dollars.

Tilt Cove copper ore production reached the large amount of 75,676 tons, being only exceeded by that of 1899, which was the greatest since the inception of the mine. Terra Nova Mine shipped 11,000 tons, and York Harbor Mine, 1,114 tons, making in all 87,790 tons, an excess of 13,182 over last year, and also exceeding the total of 1899 by 833 tons. The abnormal high price of metallic copper during the latter year, however, greatly enhanced the value of the ore to the extent of no less than \$117,474.00.

Pyrite exhibits a substantial increase, Pilley's Island Mine marketing 42,000 tons against 26,000 the year previous, or an excess of 16,000 tons. The ore from Terra Nova Mine might also be classed under this head, as it is used largely in the manufacture of sulphuric acid, but as its highest value is in its copper and iron contents, and as it also carries an appreciable amount of gold and silver, I have concluded to place it under the same heading as the Tilt Cove ore which it much resembles.

Nothing further was done in the way of exploiting the large deposit of pyrite at Rowsell's Harbor, Labrador, but the Dominion

Iron Co. still hold their option upon it, which they have recently been trying to dispose of to an American Syndicate. It is more than probable the coming season will witness some output from this property.

Barite from Collier's Bay Mine is beginning to figure well in our mineral production, the output running into four figures, viz., 4,300 tons raised last year, of which 2,760 tons were sent to the Canadian and United States markets.

The manufacture of roofing slate is rapidly growing in importance, last year's production exceeding that of 1902 by 700 tons equal to 2,100 squares, and in value by \$19,000.00.

New machinery has been installed for the more economic treatment of the slate. Instead of the old method of cutting the rock by hand it is now sawn into the required dimensions with a minimum amount of waste.

A small quantity of slate was also manufactured at the quarry near Hickman's Harbor, Random Island, but none has been exported as yet. This quarry, as well as that at Humber Arm, Bay of Islands, will in all probability become producers this year.

The slate deposits at Black Duck Cove, Random Sound and St. Jones, South West Arm of Random, have been inspected during the past summer and most favorably reported upon. Mr. Davies, one of the firm of Davies Bros., of Port Madoc, North Wales, large dealers in Welsh slate, paid both properties a visit last spring and spoke highly of their possibilities. It is opinion that the slate is bound to come to the front in time, on account of its superior excellence. There being many other deposits of slate in various sections of the Island of similar character to those above mentioned, it would appear as if the prognostication of Mr. Davies, that there is a great future for the slate industry of Newfoundland, is likely to prove correct.

In the matter of building stone, considerably more granite was quarried than in the preceding year. There appears to have been a falling off in the amount of blue Signal Hill sandstone used, but I cannot get at the exact figures of that output. The Messrs. Reid used most of their granite in bridge construction along the line. There was no paving stone manufactured last year.

The brick industry showed a slight decrease, caused by the

unfavorable weather during the early part of the season, followed later on by the burning of the plant of the Newfoundland Brick and Tile Co. at Elliott's Cove which materially affected the output. The demand for the local product is on the increase; the quality has much improved, and the time is fast approaching when there will be no further necessity for importing, at least the ordinary baked brick at all.

Gold mining, per se, may be said to have fairly commenced within the year. Although the results to date are not all that was expected, still it has been demonstrated that gold exists, not only in the baser metals, but also in quartz-leads, in a free state, and at least in one instance in the form of placer deposit. The Sop Arm mine, White Bay, is the only one that has so far shown an output worth recording. Goldenville, near Ming's Bight, where the gravel and surface deposits are being treated by washing, has not turned out a success, but it is believed that much of the exceedingly fine gold of this locality is lost by the crude methods adopted in recovering it. Be that as it may, the first washings made in the previous year were certainly of a very promising character.

The mine at Cinq Cerf Brook is chiefly a copper proposition, and contains a very rich class of ores, consisting of bornite, erubescite and chalcopyrite, disseminated through a band of quartzite rock mixed with chloritic and talcose slate. Free gold in the form of small nuggets was occasionally come across embedded both in the copper ores and quartz rock. It does not appear, however, that the precious metal is in sufficient quantity to constitute a gold mine, yet almost every specimen so far tested showed its presence, from mere traces up to values of \$6.00 or \$7.00 per ton. At best, in its present stage of development, it can only be classed as a low grade ore. As yet only portions of the surface have been stripped of its over burthen and a few shallow pits sunk along the outcrop, but nothing that could be considered a fair test of the property has been accomplished. More recently a large quartz vein charged with copper pyrites and zinc blende has been discovered on the property, which has a very promising appearance.

Although the operations of the Newfoundland Petroleum Co. at Parsons' Pond have not arrived at the productive stage, there is every reason to hope that ere long petroleum will figure largely in

these annual statistics. The Company have had much to contend with in the past, not the least drawback being the unreliable character of some of the persons in charge of the drilling.

Last season but one hole was put down to a depth sufficient to tap the petroliferous strata. When it reached 1,204 feet, a good flow of oil was encountered, which is considered the best yet met with. Two other holes reached depths of about 600 feet, and though no oil was struck, the abundance of gas given off was considered by the superintendent of the drilling operations undoubted evidence of oil at lower depths.

None of the recently drilled holes have been torpedoed. An attempt to explode the deep hole of the preceding year, which reached 2,160 feet, failed for some reason, yet this latter was found to contain 900 feet of oil last fall.

Up to date six holes have been completed and two partly drilled. All with the exception of the latter are oil producers. What the actual yield per well would amount to, nothing but continuous pumping for at least a couple of months can fully determine.

Notwithstanding the many drawbacks the Petroleum Co. have had to contend with in the past the results to date are not at all discouraging. It was estimated by Mr. Powell, the experienced superintendent, during the latter part of the past season, that the last hole put down would average five barrels a day, and he believed, were all the completed wells exploded and put to pumping, they would yield fully thirty (30) barrels.

In view of the rapidly increasing use of petroleum and its products, the outlook for the Newfoundland Petroleum Co. is wearing a much brighter aspect, and it is now considered that the establishment of a refinery is fully warranted.

Fifty barrels of this petroleum were sent to Scotland towards the end of the year to be distributed amongst two or three refineries and thoroughly tested. The results, which is looked forward to with much interest by all concerned, has not yet been received.

Nothing has been done in the way of developing our chromite deposits of late years, but the Humber Consolidated Mining Company has commenced the construction of a tramway from the main line of railway near George's Lake to their chromite mine at Benoit Brook, a distance of about 16 miles. It is their intention

to transport the ore by this means to Humber Arm, Bay of Islands, for shipment.

The right of way is cut and two miles of the line graded. Two locomotives and some fifty ore and flat cars were imported last fall. At the junction with the main line called Chrome Junction a depot has been established, and it is contemplated completing the construction of the tramway the coming season.

The talc deposits near Manuels and Fox Trap, Conception Bay, received considerable attention in the early part of last year, but owing to litigation, the work of development was retarded. A line for a tramway to connect the deposit at Talc Mountain with the railway near Manuels was surveyed, and preparations for working on an extensive scale initiated.

The number of persons actually engaged in mining and quarrying during the season indicates an increase over the previous year of 267, while the accidents were less and number of fatalities the same.

As near as can be ascertained the following figures represent the actual numbers employed in the respective mining occupations, &c. :—

	No. Employed.	No. Accidents.	No. Fatalities.
Iron Mining	344	11	1
Copper do	624	5	4
Pyrite do	250	1	1
Slate Quarrying	130	0	0
Granite do	79	0	0
Gold Mining	54	0	0
Barite do	30	0	0
Brick Making	53	0	0
Miscellaneous	207	0	0
	2,067	17	6

TABLE I.
*Mineral Production of Newfoundland for the Calendar
 Year 1903.*

Name of Product.	Quantity raised.	Manufactured or used in country.	Value of minerals exported.	Total value of production.
Barite.....	4,300 tons	.....	\$5,520	\$ 8,600
Brick.....	1,550,000 M	1,550,000 M	.....	14,120
Building Stone.....	4,000 tons	4,000 tons	.....	4,000
Cobble and Spawls.....	4,800 tons	4,800 "	.....	2,240
Copper Ore.....	27,790 tons	.....	343,050	343,050
Gold Quartz.....	1,000 tons	149 oz.	.....	3,000
Granite.....	5,400 tons	5,400 tons	.....	32,400
Iron Ore.....	588,795 "	.....	588,795	588,795
Limestone.....	1,200 tons	6,300 bus.	.....	600
Pyrile.....	42,000 "	.....	810,000	810,000
Slate.....	4,200 "	12,600 sq.	63,000	63,000
			\$1,210,365	\$1,260,805

TABLE II.
*Showing Increase and Decrease in Comparison with
 Preceding Year.*

PRODUCT.	QUANTITY.		VALUE.	
	Increase.	Decrease	Increase.	Decrease.
Barite.....	2,445 tons	.....	\$4,890	.....
Brick.....	.....	75,000 M.	.....	\$4,830
Building Stone.....	.....	1,000 tons	.....	1,000
Cobble and Spawls.....	4,300 tons	.....	1,840	.....
Copper Ore.....	16,305 tons	.....	77,240	.....
Gold Quartz.....	1,000 tons	.....	3,000	.....
Granite.....	2,445 tons	.....	14,670	.....
Iron Ore.....	.....	133,072 tons	.....	733,072
Limestone.....	35 tons	.....	835	.....
Paving Stone.....	.....	2,250 tons	.....	18,000
Pyrile.....	16,000 tons	.....	80,000	.....
Slate.....	700 tons	.....	19,000	.....
			\$200,895	\$156,902

TABLE III.

Showing Comparative Value of the Mineral Products for the past Three Years, based upon the Metallic Contents of the Metal-liferous Ores and the ruling Market Prices. In the case of the Non-Metallic Substances, the Value of the Raw Material only is given.

PRODUCT.	1901.		1902.		1903.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
Barite.			315 tons	\$3,150	2,760 tons	\$19,320
Brick.. . .	1,105,000 M	\$13,050	1,625,000 M	18,950	1,540,000 M	14,120
B'ld'g Stone	5,000 tons	5,000	3,000 tons	6,000	4,000 tons	4,000
Cobble and						
Spawls...	500 tons	500	500 tons	500	4,800 tons	2,240
Copper.....	2,755 tons	1,018,207	2,850 tons	715,008	2,710 tons	789,152
Gold.....	2,180 oz	43,609	4,000 oz	82,680†	6,344 oz†	141,471†
Granite.....	3,240 tons	19,710	2,955 tons	17,730	5,400 tons	32,400
Iron.....	459,135 tons	7,026,160	390,472 tons	5,992,905	309,085 tons	4,768,598
Lime.....	7,800 bush	975	7,100 bush	345	6,200 bush	600
Pav'g Stone.	140,000 blks	14,000	140,000 blks	18,000		
S. A. Pyrites						
*Ores.....	90,412 tons ?	1,295,905?	126,608 tns ?	1,857,972 ?	171,790 tns ?	2,520,519
Silver.....					4,411 oz	2,560
Slate....	2,000 tons	22,500	3,333 tons	44,000	4,200 tons	63,000
		\$9459,616		\$8,757,240		\$8,357,980

*Sulphuric Acid. †Estimated.

In the above table the gold and silver contents of the cupreous ores are estimated upon the following basis. Those from the Tilt Cove and Terra Nova mines average about \$2.50 per ton each in the precious metals. The ore from the York Harbor mine is said to carry about \$3.00 worth, while the Sop Arm mine yielded \$3,000 last year.

The pig iron includes that recovered from the pyrites ores, together with the product of the Bell Island haematite.

The sulphuric acid is based upon the sulphur contents of both the iron and cupreous pyrites ores. The latter may be taken ton for ton, but the Pilley's Island ore per ton is said to produce two tons of acid. This product was worth last year \$14,671½ per ton. There is also produced from this ore a certain amount of alum, which, being of low value, is not taken into account.

GENERAL REMARKS ON THE MINERAL INDUSTRY OF THE COUNTRY.

A study of the foregoing tables reveals some very significant facts which are well worthy of consideration. It will be seen that

while the figures of table I. give the value of the raw materials only as they leave the country, i.e., in the case of the metallic ores, their final value when reduced to their commercial products, equalled approximately \$8,357,980 or nearly seven times that of the crude ores.

If from the above figures we deduct the freight and smelting charges which may be assumed at about 25 per cent. of the total value, there is still left \$6,099,560, to which must be added the value of the non-metallic substances requiring no treatment, amounting to \$115,220, or after deducting all costs and charges, a total of \$6,214,780.

These figures point very conclusively to the great loss the country sustains each year by the shipment abroad of her mineral products in their crude condition. Could means be devised to have these ores treated at home, and the metal contents marketed, the country would be greatly benefited thereby, and in the course of a very few years the mineral industry would become one of the most prosperous in the Island.

These natural resources are assets of prime value, and it appears to me should be turned to the best possible account, so that at least a fair proportion of the wealth produced therefrom could be retained in the country. The mere raising and exporting of the minerals as at present, is depriving it of nearly all the fruits of the industry. A mere modicum of this wealth falls to our share, just what it costs to mine and put on board ship, probably not exceeding altogether \$350,000.

I have frequently referred to this subject in former reports, and have pointed out that one step in the right direction to attain that end, would be the construction of a customs smelter for our copper ores, in some central locality in the great copper district of Notre Dame Bay. It would mean much to the future of that industry and would be followed, I have little doubt, by others for the manufacture of sulphuric acid from the pyrites ores, and the extraction of the precious metals from the baser materials. There are many small deposits of cupreous pyrites ores in and around that part of the country which of themselves are not sufficiently extensive to warrant mining on a large scale, but which would pay well if worked in a small way, could the ores be marketed on the spot. Almost every ton could then be utilized, and many persons

would find remunerative employment especially during the winter months in raising it.

As most of the copper pyrites ores of the country contain more or less gold and silver, these could be extracted and refined in the country and would in most cases pay all the mining costs and charges, leaving the value of the sulphuric acid, copper and iron as clear profit to those interested in the enterprise. What such an establishment would mean to the future of the mining industry of the country can not be realized just now, yet I have no hesitation in stating that in the course of a very few years it would double or treble the present figures.

A refinery for our petroleum deposits on the West Coast would be another step in this direction, and I would respectfully suggest that any encouragement that could be given towards either in the way of a small bounty would be money well spent. It is the only way the country can ever hope to realize the benefit of its undoubtedly magnificent mineral resources.

I have the honor to be, Sir,

Your obedient servant,

JAMES P. HOWLEY.

N. B.—I append a list of the companies at present operating our mines and quarries, and the localities of the several scenes of operation, which may prove of interest.—J.P.H.

BARITE.

Collier's Bay Barite Co. Collier's Bay, Trinity Bay.

BRICK YARDS.

Newfoundland Brick & Tile Co. Elliot's Cove, Random Island, T. B.
 Pelley Brothers George's Brook, Smith Sound, T. B.
 James Pitman Brick Yard, Smith's Sound, T. B.
 Smith Brothers Snook's Harbor, Random Island, T. B.

COAL.

Barachois Coal Co., Ltd. Bay St. George.

CHROMITE.

Humber Consolidated Mining Co. .. Chrome Pt., Benoit Brook, P.-a-P.

COPPER ORE.

Cape Copper Co.Tilt Cove, Notre Dame Bay.
Newfoundland Exploration Syndicate ..Terra Nova Mine, Bale Verte.
Humber Consolidated Mining Co.York Harbor, Bay of Islands.

GOLD.

Sop Arm Mining Co.Sop Arm, White Bay.
Goldenville Mining Co.Goldenville, Ming's Bight.

GRANITE QUARRIES.

Reid Newfoundland Co.Topsails, on R. R. Line.
William EllisPetites, South Coast

IRON ORE.

N. S. S. Co., and D. I. & S. Co. ..Great Bell Island, Conception Bay.

LIMESTONE.

John ScoreCobb's Arm, N. W. Island, N. B. Bay.

PETROLEUM.

Newfoundland Petroleum Co., Ltd.Parson's Pond, Shallow Bay.

PYRITE.

Newfoundland Exploration SyndicatePilley's Island, N. D. Bay.

SLATE.

Wilton Grove Slate Co.Smith's Sound, Trinity Bay.